

Connect and Discover: Assistive Technology

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Chicago, IL

Financial Disclosure

- + I have the following financially relevant relationships in the service and/or product communicated, compared, evaluated and/or reviewed in this presentation
 - + Illinois School for the Deaf – Consultant/Trainer
- + ILAA provided financial support for this presentation



Agenda

- + Areas to cover:
 - + Advances in Amplification
 - + Alerting Options and Emergency Preparedness
 - + Hearing Assistive Technology
 - + Telecommunications
 - + Connectivity
 - + Accessories
 - + Speech-to-Text Services
 - + Access for Entertainment
 - + Apps
- + Resources

Why Assistive Technology?

- + The individual is a completely visual communicator
- + The individual's HA/CI battery is dead
- + The individual's HA or CI is being repaired
- + The individual gets limited benefit from their amplification and wants to access information in a different way
- + The person talking is far away and the listener cannot hear
- + It's noisy
- + ...

ADVANCES IN AMPLIFICATION

Hearing aids



Cochlear implants

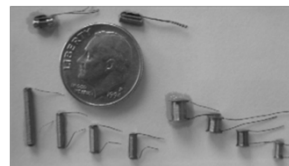
○ = microphone location



Please don't forget the T-coil!

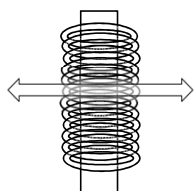


- + Gives our patients **OPTIONS** to access many types of Hearing Assistive Technology
- + Looped public spaces
- + Neckloops
- + Telecommunication



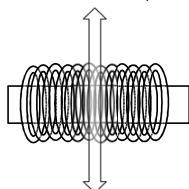
Orientation

- Vertical**
- + Looped rooms
 - + Neckloops



<http://www.hearinglosshelp.com/articles/tcoorient.htm>

- Horizontal**
- + Telephone
 - + Induction earbuds/ HATIS



Advanced Bionics



Naida Q70
(vertical)



Harmony
(slanted)



Neptune with T-Comm
(vertical)



External T-coil
(adjustable)

Cochlear Corporation



Freedom
(vertical)



Nucleus 5
(horizontal)



Nucleus 6
(horizontal)



Room Loop
Booster

Med-El



Opus 2
(vertical)



Rondo
(vertical)

ALERTING OPTIONS AND EMERGENCY PREPAREDNESS

Alerting Options

- + Very loud alarm
- + Flashing/strobe light
- + Vibration
 - + Most effective



Alarm clocks

- + Stationary
- + Portable

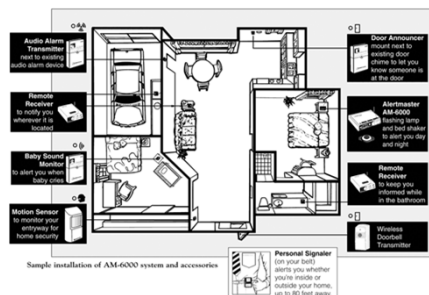


Visual alerting systems

- + Fire/smoke
- + Carbon monoxide
- + Weather radio
- + Baby monitor
- + Door knocker



Being alert at home



Access your local resources

- + Contact your local fire department
- + They can send someone to the individual's home to do an inspection with recommendations
- + They have a list of recommended electricians/services
 - + Private electrician
 - + Alarm company (e.g., ADT)
- + Do your families have a plan???



Lodging

+ When an individual makes a reservation...

- + Hearing accessible rooms
 - + Visual alerts in main room and bathroom
 - + Doorbell on outside of door



- + Hotel Kit
 - + Make sure it works



Lodging

+ When an individual arrives...

- + Tell the front desk, in case of emergency
- + Give them permission to enter their room?
- + Ask for a second key
- + Don't use the additional safety lock



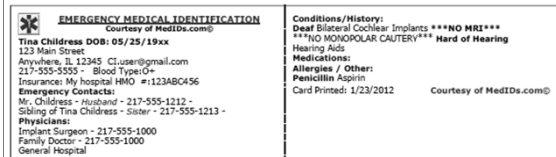
What to do in case of emergency

- + Patient Emergency Identification Card
 - + Contact the manufacturer or look in the materials received at initial stimulation
 - + Keep next to (or in front of) your Driver's License or State ID
- + ID jewelry or portable medical record storage
 - + Google "medical alert jewelry"



What to do in case of emergency

- + Create your own Emergency Medical Identification card at <http://medids.com/free-id.php>



Information to include

- + "Deaf", "deaf" or "hard of hearing"
- + Use "cochlear implant(s)" or "hearing aid(s)"
- + Specific to CI recipients:
 - + NO MRI
 - + NO MONOPOLAR CAUTERY
 - + Name and phone number to CI surgeon/clinic

HEARING ASSISTIVE
TECHNOLOGY

Sending and receiving information

- | <u>Transmitters</u> | <u>Receivers</u> |
|-----------------------------|---|
| + Frequency Modulation (FM) | + Direct audio input |
| + Digital Modulation (DM) | + T-coil |
| + Infrared (IR) | + Alone |
| + Bluetooth | + Neckloop |
| | + Induction earhook |
| | + Single speaker |
| | + toteable/tower/ ceiling mounted |
| | + Multiple speakers |
| | + ceiling mounted / interactive whiteboards |
| | + Streamer |

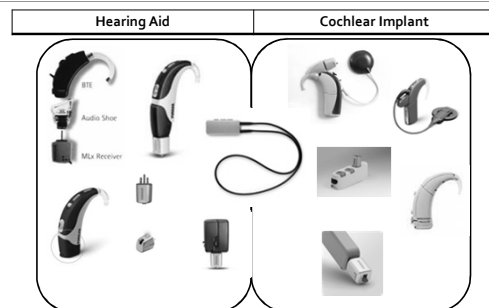
Did you know...

Formerly known as...	Now known as...
Assistive Listening Device (ALD)	Hearing Assistive/Assistance Technology (HAT)
Soundfield systems	Classroom Audio Distribution Systems (CADS)
FM systems	Remote Microphone Hearing Assistive/Assistance Technology

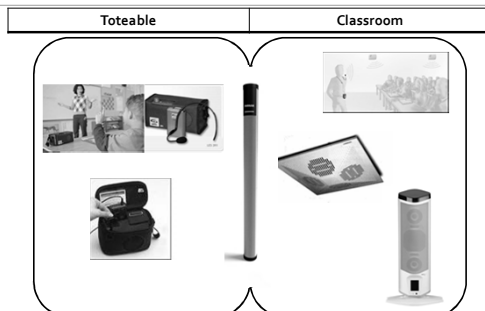
Transmitters



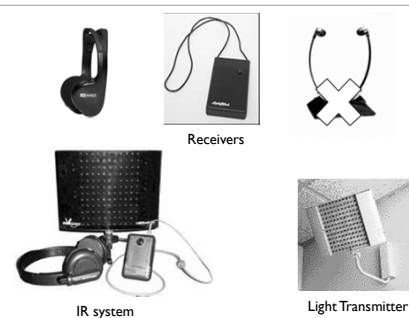
Receivers



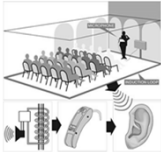
CADS



Infrared Devices



Induction Loop Systems



Set up for room loop



Chair loop

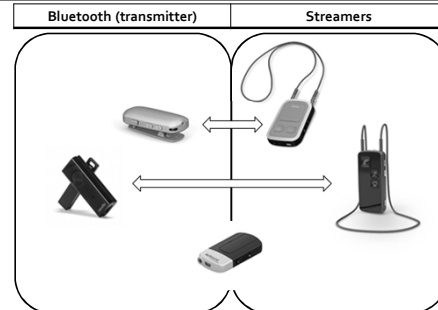


Taxi



Personal loop

Accessories for HA and CI



TELECOMMUNICATIONS

Telecommunications

- + Today's telecommunication devices have put Deaf, deaf and hard of hearing individuals on an EQUAL LEVEL with hearing people:
 - + E-mail
 - + Texting
 - + Visual voice-mail
 - + Instant Messaging
 - + PIN (for BlackBerry users only)
 - + Video calls

This is now!



Cell phones

- + The FCC require all cell phone makers and service providers to make phones hearing aid compatible (HAC) for people using hearing aids and cochlear implants.
- + Devices that are HAC compliant have:
 - + Less static
 - + Less interference
 - + Better telecoil connections
- + HAC compliant device packages are marked with "M" or "T" ratings



What are “M” and “T” ratings?

“M” rating

- + “M” rating refers to the microphone mode.
- + Wireless devices rated M3 or M4 are likely to generate less interference.
- + M4 is the better/higher of the two ratings.

“T” rating

- + “T” rating refers to the telecoil mode.
- + Wireless devices rated T3 or T4 are likely to be more usable with a hearing device’s telecoil (“T Switch” or “Telephone Switch”).
- + T4 is the better/higher of the two ratings.

Look for M4/T4 to have the best chance of being interference free whether used with your hearing aids or cochlear implants in microphone or t-coil mode.

Finding the HAC rating

- + www.accesswireless.org
- + www.phonescoop.com/phones/finder.php
- + Check the packaging/description card in the store
- + Search online if you know the make and model of the phone

Amplified telephones

- + Used in place of standard phones
- + Models have a variety of features including tone adjustment, volume boost, loud ringer, visual signalers, memory buttons, capacity for multiple lines, and power adapters.



Transcribed voicemail



- + Several services out there that will:
 - + Listen to your voicemail using voice-recognition software or live captioners
 - + Transcribe your voicemail
 - + E-mail it to your computer or mobile device
- + Check with your carrier to see which services are available
- + Prices range from around \$0.35/message to unlimited messages for \$40/month
- + www.google.com/googlevoice (FREE!)
 - + Sign up for a number

Google voice 

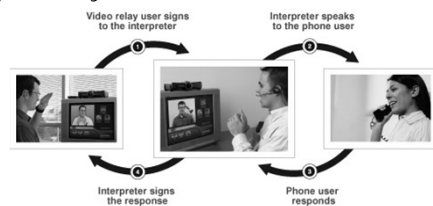
Captioning for phones

- + Read the display on the desktop phone itself, a computer screen, a tablet or mobile phone (will need to use speakerphone) as well as listen to the other person’s voice
- + Used by people who voice for themselves



Video Relay Service (VRS)

- + A relay service that uses the Internet and video equipment to allow deaf persons to make phone calls using American Sign Language (ASL) or English-based sign (with or without speechreading cues)



Ways to access VRS

- + Desktop
- + Portable
- + Download program to personal computer
- + Mobile



Video Remote Interpreting (VRI)

- + Uses video-conferencing equipment to provide sign language interpreting services
- + Both the deaf and hearing person are in the same room
- + The interpreter is at a call center in another city
- + Especially useful for rural areas where there may be a lack of qualified interpreters



Voice Carry Over

- + VCO is a feature from the relay service that allows a person with hearing loss to use their own voice on the telephone, while receiving the other party's communication
- + Works with text relay as well as video relay



CONNECTIVITY

Ableplanet Headphones

- + Many products to choose from (e.g., standard, noise-canceling headphones, wireless, bone-conduction, infrared, Bluetooth)
- + Designed for people with hearing loss so less likely to have interference
- + Cupped style is still recommended
- + Can also use with T-coil (but may need to increase volume)



<http://shop.ableplanet.com>

Quattro 4.0 Amplified Bluetooth Neckloop

- + Device needs to be Bluetooth compatible
- + Caller ID is visible
- + Removable Bluetooth microphone



<http://www.clearsounds.com/node/172>

Streamers

- + Proprietary intermediary device with various hearing aids and cochlear implants
- + Many can connect to iDevices via Bluetooth



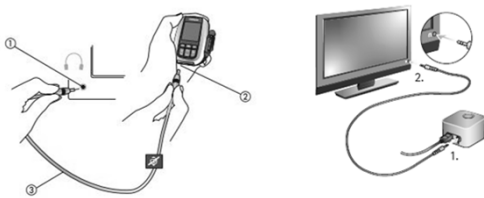
Direct Audio Input

- + Hearing aid users
 - + Will need an audioshoe (adapter) with 3-hole plug
- + Cochlear implant recipients
 - + **WARNING:** If using with a cochlear implant recipient, device must be battery-operated (NOT powered by a plug into the wall) unless using a cable with surge protection
 - + Each manufacturer has their own proprietary cables



Audio cable to transmitter

- + Connect transmitter to input source (e.g., computer or TV) and student will pick up signal via FM/DM



ACCESSORIES

Speakers

- + Chill Pill
- + BassBoomz
- + Logitech Speaker Stand



DreamZon LightOn Phone Signaler

- + Uses the vibration from your phone to trigger the flashing light alert
- + No plugs
- + Optional additional bedshaker
- + Works as a stand, too



Serene Innovations RF-200 Cell Phone Signaler

- + Works with cell phones and landline phones
- + For cell phones, place the phone on the RF-200 cradle and it will flash when it detects the vibration of your cell phone
- + Unique flashing patterns to distinguish between incoming calls or messages
- + Indicator light lets you know when you have missed calls or messages
- + Detects and alerts to WEA (Wireless Emergency Alert) public emergency broadcast warnings (if provided by wireless carrier)
- + USB port for charging cell phone
- + Ringer tone Hi-Lo-Off
- + Bed shaker jack (bed shaker not included)
- + AC powered with battery backup (4 AA batteries not included)



Wearable accessories

Pebble watch <http://getpebble.com>



Apple watch (early 2015) <https://www.apple.com/watch/>

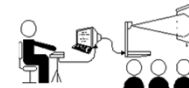


SPEECH-TO-TEXT SERVICES

Credit: Valerie Stafford-Mallis from Alternative Communication Services

What is CART (Communication Access Real-Time Translation)?

- Verbatim: capture 100% of conversation
- Certification - Accuracy: 96% - 98.5%
- Certification - Speed: 180 WPM - 225 WPM
- Specially trained court reporter
- NCRA certifications: CCP, CRR, CBC
- Remote CART (internet)
- On-site CART (service provider in room)



What is Text Interpreting? C-Print or TypeWell

- Text condensing software used to provide real-time communication access
- Regular laptop - no special equipment or keyboard
- Meaning-for-meaning.
- Condenses the language into fewer words
- Can be quicker and easier to read than verbatim
- RGL 5th grade or above
- Training takes 1-3 months
- Transcriptionist can be on site or remote



What is Voice-Recognition Software?

Dragon, Windows Speech Recognition, others

- Good for dictation, basic computer commands, and editing
- Not as effective for facilitating effective two-way communication with multiple speakers
- Used in Captioned Telephony
- Some voices difficult to recognize
- Humans outperform software
- Remote use over the internet can have significant lag time

Hi John, call me when you get this e-mail. I'm running a little bit late. :)



ACCESS FOR ENTERTAINMENT

Assistive Listening Devices



- + Plan ahead to make sure the individual has any necessary connections/cables and to allow time for troubleshooting
- + Especially true if the individual want to use their T-coil (which is not available in all theaters)
- + Arrive at least 30 minutes early and make sure that it is known who is turning on the system, channels are synched and the batteries are good



<http://www.ideasconsultinginc.com/stay-independent/entertainment.asp>

Assistive Listening Devices Headphone receiver options



- + Over-the-head receiver styles work best for those with cochlear implants and/or hearing aids



CaptiView

CV

- + Need to get special device at the movie theater ticket counter
- + Words are displayed on a personal LED display



Sony's Entertainment Access Glasses

SONY-DV

- + Need to get special device at the movie theater ticket counter
- + Words are displayed towards the bottom of the glasses



Sign language interpreters

- + Off stage



- + On stage



Open Captioning



- + Words are available for everyone to see
- + Includes dialogue as well as environmental sounds
- + Movies
 - + Often has limited showing times and limited selection
 - + Preferred by most deaf/hard of hearing people
- + Theater
 - + Display is often on stage
 - + It's like karaoke!



Personal Captioning in Theaters

- + Use a special device or tablet/SmartPhone to access captions



Accessible Theater in the Chicagoland area

- + <https://delicious.com/hlpuears/Chicago%20Accessible%20Theater>
- + Links to their accessibility pages



- + <http://www.chicagoplays.com/access.html>
- + Calendar view



APPS

What should I look for?

- + Multiple voice choices
 - + If you can record your voice, even better!
 - + Natural > synthesized
- + Turn on/off text
 - + Auditory training/reading
- + Good volume control
 - + External speaker
- + Media players with built-in CC
 - + Be sure to update your Apps!
- + Record keeping



App-lications <http://bit.ly/Apps4HL>




- | | |
|--|--|
| <ul style="list-style-type: none"> + Accessibility + Advocacy + Audiology <ul style="list-style-type: none"> + Counseling tools + Hearing Test + Listening Therapy <ul style="list-style-type: none"> + Discrimination + Multi-step directions + Listening in noise + Learning a variety of environmental sounds + Auditory memory + Music | <ul style="list-style-type: none"> + Media Player <ul style="list-style-type: none"> + Captioned + Personal Amplifier + Sign Language + Sound Level Meter + Speech + Telecommunication <ul style="list-style-type: none"> + Text-based + ASL + Resources (e.g., favorite developers, blogs and websites) |
|--|--|




Apps that communicate with wearables

- Otosense
 - <http://www.otosense.com/>
 - Coming to iOS soon!
 - Currently available on Google Play store
 - Can connect with Pebble
 - Will probably be compatible with Apple Watch in the future
 - Also compatible with Philips HUE lights
- Braci
 - <http://braci.co/ios-version.html>
 - Coming to iOS soon!
 - Currently available on Google Play store
 - Can connect with Pebble
 - Will probably be compatible with Apple Watch in the future



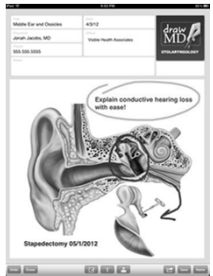
eCaps Pro From Oticon

- Enter in audiogram to simulate hearing loss
- Demonstration of listening in different degrees of background noise
- FM simulation
- Takes up 1.5 GB
 - Can get DVD to load on PC (contact your Oticon rep)
- <http://bit.ly/eCapsPro> (NOT on iTunes)
- http://us.oticon.info/sage_us_lz/lz.aspx?p1=052400257681&p=0
http://us.oticon.info/sage_us_lz/lz.aspx?p1=052400257681&p=0 (demo)




drawMD ENT

- Great counseling tool
- Various views of different parts of the ear
- Stamps that can be placed anywhere
 - Tube
 - Cerumen
 - Cholesteatoma
 - Perforation



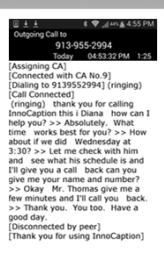
Data tracking

- D.A.T.A. – Direct Assessment Tracking Application
- Can track multiple things at the same time
- Easy to use
- Nice graphs



Telecommunications

- InnoCaption
 - Uses live CART writers to transcribe phone conversations
 - Different than CapTel, ClearCaptions and CaptionCall which uses voice recognition technology (trained to the Communication Assistant) to transcribe phone conversations
 - My opinion → Quicker, more accurate



RESOURCES



Outreach Program

Training	<ul style="list-style-type: none"> • For educators, parents, educational interpreters, other professionals and paraprofessionals, college programs
Consultations and technical assistance	<ul style="list-style-type: none"> • Especially for under-served locations
Cochlear Implant Support	<ul style="list-style-type: none"> • Monthly meetings with students, evaluations and tools upon graduation, CI Support Page, CI Connect Camp
Exhibits	<ul style="list-style-type: none"> • Local and state events
Conferences	<ul style="list-style-type: none"> • Parent and professional conferences
Social events	<ul style="list-style-type: none"> • Tiger Kids Days

- + Services are FREE to you
- + We can provide CPDUs and Certificates of Completion
- + Need a minimum of 5 participants

[illegible]

Illinois School for the Deaf CI Support Page
<http://bit.ly/ISDOutreachCI>

 Advanced Features www.qualcomm.com	Advanced Features	Carrier	Model
Camera	Advanced Auto Exposure	Verizon Wireless	BBK 5 
Phone	1000-voice SRV	Verizon Wireless	Verizon Wireless
Screen	262K color TFT	Verizon Wireless	Verizon Wireless
External display	External Display	Verizon Wireless	External Display
Memory	128MB	Verizon Wireless	128MB
Other key features	<ul style="list-style-type: none"> ✓ Quadband ✓ Bluetooth ✓ MP3 ✓ Java ✓ Video ✓ USB ✓ External Display ✓ External Display 	Verizon Wireless	<ul style="list-style-type: none"> ✓ Quadband ✓ Bluetooth ✓ MP3 ✓ Java ✓ Video ✓ USB ✓ External Display ✓ External Display
Carrier or device	Verizon Wireless	Verizon Wireless	Verizon Wireless
External display	<ul style="list-style-type: none"> ✓ External Display ✓ External Display 	Verizon Wireless	<ul style="list-style-type: none"> ✓ External Display ✓ External Display
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Websites

- + Illinois School for the Deaf
 - + <http://www.illinoisdeaf.org>
- + Outreach Program
 - + <http://bit.ly/ISDO outreach>
- + Facebook page
 - + <http://bit.ly/ISDO outreach FB>



Assistive Technology Project

[www.jalc.edu/gurc/assistive technology project](http://www.jalc.edu/gurc/assistive%20technology%20project)



TINA CHILDRESS
ILLINOIS SCHOOL FOR THE DEAF

SHERI COOK
GALLAUDET UNIVERSITY REGIONAL CENTER - MIDWEST



CHERI SINNOTT
ILLINOIS SERVICE RESOURCE CENTER

Listening and Spoken Language Knowledge Center

- + <http://listeningandspekenlanguage.org/Tertiary.aspx?id=1213>



Hearing Loss Association of America (HLAA)



- + <http://www.hearingloss.org/content/technology>
- + Great resource that includes tutorials, explanations and videos

The screenshot shows the Delicious website interface. At the top, the text reads "My social bookmarking site" followed by the URL "www.delicious.com/hlpuears". Below this, two search criteria are listed: "+ Scores of links related to hearing loss – including AT and vendors" and "+ Searchable via tags". The search results are displayed in a table with columns for "Link", "Score", and "Date". The first result is from Tina Chidress, dated 10/10/2012, with a score of 100. The second result is from Assistive Technology, dated 10/10/2012, with a score of 100. The third result is from Hearing Loss Solutions for You!, dated 10/10/2012, with a score of 100. The fourth result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The fifth result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The sixth result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The seventh result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The eighth result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The ninth result is from CH2M Solutions, dated 10/10/2012, with a score of 100. The tenth result is from CH2M Solutions, dated 10/10/2012, with a score of 100.